

Date: Wednesday, 5/31/2006 7:39:32 AM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : TUBE ASSEMBLY  
 Job Number : 27298  
 Estimate Number : 10925  
 P.O. Number : N/A Part Number : D2003105  
 This Issue : 5/31/2006 S.O. No. : N/A Drawing Number : D2003 REV B  
 Prsht Rev. : NC Project Number : N/A  
 First Issue : N/A Type : SMALL /MED FAB Drawing Revision : B  
 Previous Run : N/A Material : N/A  
 Written By : *See Comment Below* Due Date : 6/30/2006 Qty: 5 Um: Each  
 Checked & Approved By : *06.05.31*  
 Comment : Est. B 00.01.12 Re-format EC

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile &amp; type labels per PPP D2003-105

*5*  
*06/06/27*

2.0 M304TR0375W035 304 TUBING



Comment: Qty.: 0.9275 f(s)/Unit Total: 4.6373 f(s)

304 TUBING

Material: 3/8" A x 0.035" wall 6061-T6 tubing

Batch: *M19051 x3**M17666 x2**FF 06.08.16 5*

3.0 M26506 Firesleeve-crkl .375IDia



Comment: Qty.: 0.9406 f(s)/Unit Total: 4.7030 f(s)

Material: M2650-6 Heat sleeve

Batch: *M17521**FF 06.08.16 5*

4.0 MS208196D Sleeve



Comment: Qty.: 2.0000 Each(s)/Unit Total: 10.0000 Each(s)

Sleeve

Pick:

Qty Part Number

Description

Batch

2 MS208196D

Sleeve

*M17521 x2**M17654**FF 06.08.16 5*

5.0 AN8186D Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total: 10.0000 Each(s)

Nut

Pick:

Qty Part Number

Description

Batch

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector
060608	4	-60 is required as per Dwg. Remove -85 permanent change.	FF	06.06.08	5		

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Date: Wednesday, 5/31/2006 7:39:32 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: TUBE ASSEMBLY

Job Number: 27298

Part Number: D2003105

Job Number:



Seq. #:

Machine Or Operation:

Description :

2 AN818-6D Nut

*M17651*

*FF 06.08.16 5*

6.0

D3158

Heat Shrink



Comment: Qty.: 0.3750 f(s)/Unit Total: 1.8750 f(s)

Heat Shrink

Pick:

Qty. Part Number Description

Batch

4 D3158-045 Heat shrink ✓

*B21864A*

*FF 06.08.16 5*

7.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Cut as per template D2003-105 (10.60" long) *McKe per template D2003-105*

Cut: 10.75" long as per Dwg D2003

Form tube as per template D2003-105

Assemble as per Dwg D2003

*CP 06.08.15*

*PTO*

*FF. 06.08.16 5*

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*SD 06/08/16 5*

9.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *ST200*

*CL RB 06/08/18*

*(5)*

10.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

*D 06/08/18*

*(5)*

Job Completion



*u 06.08.18*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			
06/08/15	7	at last bend of second Tub, wall TL attend	VB 06/08/15	Destroy & replace	FF 06.08.15	VB 06.08.16	VB 06/08/16	VB 06/08/16

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: ☒ Date: 06/03/19

NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



DESIGN <i>AS</i>	DRAWN BY <i>AS</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>HE</i>	APPROVED <i>AS</i>	DRAWING NO. D2003	REV. 8 SHEET 1 OF 2
DATE 99.06.08		TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS	
A	90.04.09	NEW ISSUE	
B	99.06.08	UPDATE PER TEMPLATES; ADD P/N'S; 0.025 TUBING NOW 0.035 (TSR1049)	

RELEASED  
99.06.08 KE

P/N	TEMPLATE	HEATSLEEVE LENGTH <sup>1</sup>	CUT LENGTH OF TUBE <sup>2</sup>	MS20819-8J SLEEVE	AN818-8J NUT	MS20819-8D SLEEVE	AN818-8D NUT	MS20819-6D SLEEVE	AN818-6D NUT	DESC.	MATERIAL <sup>4/5/7</sup>	VENDOR OR SPEC
D2003-001	T2003-001	5.2	6.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-003	T2003-003	7.3	8.12					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-005	T2003-005	9.8	10.62					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-007	T2003-007	20.0	19.63					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-009	T2003-009	12.38	12.44					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-011	T2003-011	33.31	32.38					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-013	T2003-013	12.7	13.54					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-015	T2003-015	17.2	18.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-017	T2003-017	17.0	16.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-019	T2003-019	9.8	10.62			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-021	T2003-021	N/A	2.25			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-023	T2003-023	4.5	5.33			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-025	T2003-025	9.8	10.60			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-027	T2003-027	7.25	7.38			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-029	T2003-029	17.2	18.00			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-700/6
D2003-031	T2003-031	14.6	15.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-033	T2003-033	29.75	29.62	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-035	T2003-035	24.7	27.60	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-037	T2003-037	24.81	23.38	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-039	T2003-039	34.0	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-041	T2003-041	6.0	5.88	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-043	T2003-043	11.7	10.75	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-045	T2003-045	3.50	2.44	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-047	T2003-047	5.56	5.56	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-049	T2003-049	33.2	34.00	2	2					TUBE ASS'Y	CRES 0.500 OD x 0.035 W	AISI 304
D2003-077	T2003-077	N/A	6.25					1	1	JET	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-101	T2003-101	13.25	13.13					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-600/6
D2003-103	T2003-103	12.38	12.00					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-600/6
D2003-105	T2003-105	10.75	10.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-600/6
D2003-107	T2003-107	12.75	12.25					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-600/6
D2003-109	T2003-109	8.25	8.125			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-600/6
D2003-111	T2003-111	4.75	4.625			2	2			TUBE ASS'Y	6061-T6 0.500 OD x 0.035 W	VWV-T-600/6
D2003-116	T2003-116	4.0								HEATSLEEVE	M2650-20 CRINKLE-SOFT	STRATOFLEX
D2003-120	T2003-120	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-14	T2003-14	4.0								HEATSLEEVE	M2650-14 CRINKLE-SOFT	STRATOFLEX
D2003-16	T2003-16	4.0								HEATSLEEVE	M2650-16 CRINKLE-SOFT	STRATOFLEX
D2003-205	T2003-205	9.75	9.60					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6
D2003-207	T2003-207	3.75	3.75					2	2	TUBE ASS'Y	6061-T6 0.375 OD x 0.035 W	VWV-T-700/6

16.8750

16.0625

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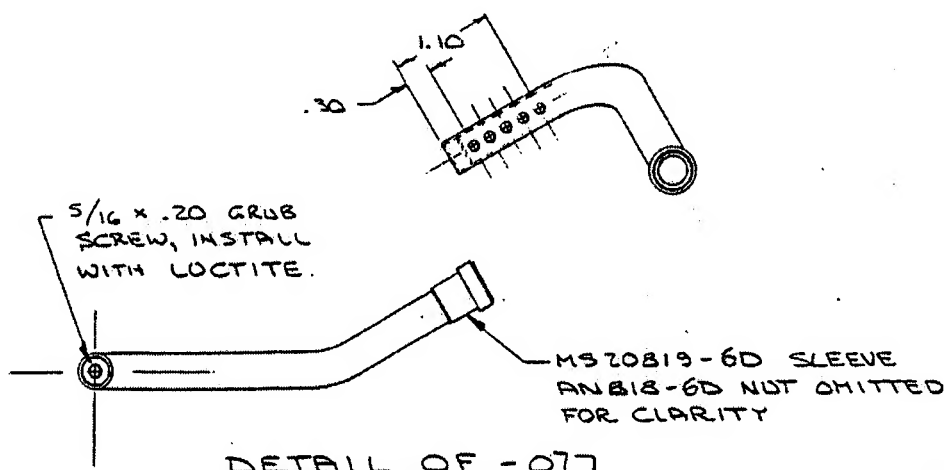


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CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2003	REV. 8 SHEET 2 OF 2
DATE 99.06.08	TITLE 206 CABIN HEATER TUBE ASSEMBLIES NTS		

**RELEASED**  
99.06.09 *KE*

**Notes:**

- (1) USE STRATOFLEX M2650-6 CRINKLE-SOFT HEATSLEEVE.
- (2) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATES.
- (3) TUBES TO BE FLARED 30° TO MATE WITH FITTINGS MADE TO MS33514.
- (4) ENSURE SEAMLESS TUBING IS USED.
- (5) INSTALL HEATSLEEVE OVER ALL TUBES WITH A DESIGNATED LENGTH OF HEATSLEEVE PER THE PARTS LIST.
- (6) 5052 (VW-T-700/4) TUBING MAY BE SUBSTITUTED WHEN 6061 TUBING IS NOT AVAILABLE.
- (7) 0.049 WALL THICKNESS CRES TUBING MAY BE SUBSTITUTED WHEN 0.035 IS NOT AVAILABLE.
- (8) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.



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DESIGN B WILLIAMS	DRAWN BY K HAND	DART AEROSPACE LTD VICTORIA INTERNATIONAL AIRPORT, CANADA	
CHECKED B	APPROVED K	DRAWING NO. D206-571	REV. C SHEET 1 OF 11
DATE JUNE 9, 1992		TITLE BELL 206 HEATING SYSTEM	
C	JUNE 30, 1995	RE-DRAWN	

Part No.	Description	-011	-013	-043	-341	-345
✓ D206-571-011	Heater Kit 206A/B/L	X				
D206-571-013	Heater Kit 206L1/L3/L4		X			
✓ D206-571-043	Valve/Manifold Assembly	1	1	X	1	1
D206-571-341	Supplementary Heater Kit 206A/B				X	
D206-571-345	Supplementary Heater Kit 206L1/L3/L4					X
D2001-08	Valve			1		
✓ D2003-041	Tube Assembly (8J)	1				
✓ D2003-043	Tube Assembly (8J)	1				
✓ D2005-001	Hose Assembly (8J)	1			1	1
✓ D2005-009	Hose Assembly (8J)	1	2		1	1
✓ D2005-011	Restrictor	1				
✓ D2005-013	Restrictor	1				
D2007-001	Adapter		1			
D2026-101	Screw			2		
✓ D2050	Grille	1	1		1	1
D2120	Tab Washer			1		
✓ D2162-3R-096	Control Cable	1			1	
D2162-3R-120	Control Cable		1			1
D2155	Adapter, 2" - 3" Hose					
✓ D2156	Vent Flange	1	1		1	1
D2160	Lever			1		
✓ D2377	Flow Divider	1	1		1	1
D2410	Aspirator Manifold Assembly			1		
D2455	Noise Attenuator			1		
✓ SCEET 12	Hose 3"dia	11'	11'		11'	11'
✓ AN526-832R6	Screw	10	10		10	10
✓ AN526-1032R12	Screw	6	10		6	10
✓ AN804-8J	Bulkhead Tee Fitting	1	1		1	1
✓ AN814-L8J	Cap, Male	1	1			
✓ AN815-8J	Union	1	1			
✓ AN816-8-8D	Nipple			1		
✓ AN824-8J	Tee Fitting	1				
✓ AN919-12D	Reducer					
✓ AN924-8J	Nut	3	1		1	1
✓ AN929-8J	Cap, Female	1	1			
✓ AN938-8D	Tee, Female					
✓ AN938-8J	Tee, Female	1				
✓ AN960JD10	Washer	10	10		10	10
✓ AN960JD8	Washer	10	10		10	10
✓ AN960C1216	Washer	2	2		2	2
✓ QS100-24S	Clamp					
✓ QS100-48S	Clamp	8	8		8	8
✓ MS9385-08	O'Ring	5	2			
✓ MS21042L3	Nut (Option MS21042-3)	6	10		6	10
✓ MS21042L08	Nut (Option MS21042-08)	10	10		10	10
✓ MS21919DG6	Clamp, Cushion	6	10		6	10
✓ NAS4DD3-24	Spacer	6	10		6	10
✓ 23007167	Gasket		1			



DESIGN B WILLIAMS	DRAWN BY K HAND	DART AEROSPACE LTD VICTORIA INTERNATIONAL AIRPORT, CANADA	
CHECKED B W	APPROVED [Signature]	DRAWING NO. D206-571	REV. C SHEET 2 OF 11
DATE JUNE 9, 1992		TITLE BELL 206 HEATING SYSTEM	
C	JUNE 30, 1995	RE-DRAWN	

### GENERAL NOTES:

#### 1. CAUTION

ENSURE TUBING, FITTINGS, AND VALVES OF THIS SYSTEM CLEAR STRUCTURE, WIRING AND COMPONENTS BY A MINIMUM OF 0.25 INCH AND CLEAR CONTROLS BY A MINIMUM OF 0.40 INCH.

THIS CAN BE ACCOMPLISHED BY THE PROCEDURES OF THE DRAWINGS AND BY FOLLOWING THE STANDARD CLAMPING PRACTICES OF AC43.13.1A USING MS21919 CLAMPS (OR EQUIVALENT) OF AN APPROPRIATE SIZE.

#### 2. ON C20B AND C20R ENGINES

REMOVE ANN814-8 PLUG OR PARTICLE SEPARATOR RESTRICTOR AND REPLACE WITH D2005-013 RESTRICTOR C/W AN939-8J, 'O' RING AND LOCKNUT AS SHOWN ON SHEET 8. REINSTALL AN814-8 OR PARTICLE SEPARATOR RESTRICTOR IN AN939-8J AS SHOWN ON SHEET 8.

#### 3. LOCKWIRE

LOCKWIRE PER MS33540 USING MS20995C LOCKWIRE.

#### 4. COMPATIBILITY

COMPATIBILITY OF THIS INSTALLATION WITH THE AIRCRAFT IS THE RESPONSIBILITY OF THE INSTALLER. ENSURE THAT THIS INSTALLATION DOES NOT CONFLICT WITH A PREVIOUS MODIFICATION.

#### 5. WORKMANSHIP

UNLESS OTHERWISE STATED ALL WORKMANSHIP IS TO BE TO THE STANDARDS OF THE AIRCRAFT MAINTENANCE MANUAL AND AC 43.13.1A

#### 6. INSTALLATION INSTRUCTIONS

THIS DRAWING IS TO BE USED IN CONJUNCTION WITH INSTALLATION INSTRUCTIONS IIN-D206-571.

#### 7. CONTINUING AIRWORTHINESS

THIS INSTALLATION SHOULD BE MAINTAINED IN ACCORDANCE WITH MAINTENANCE MANUAL SUPPLEMENT MMS-D206-571.

#### 8. SUPPLEMENTARY HEATER KITS

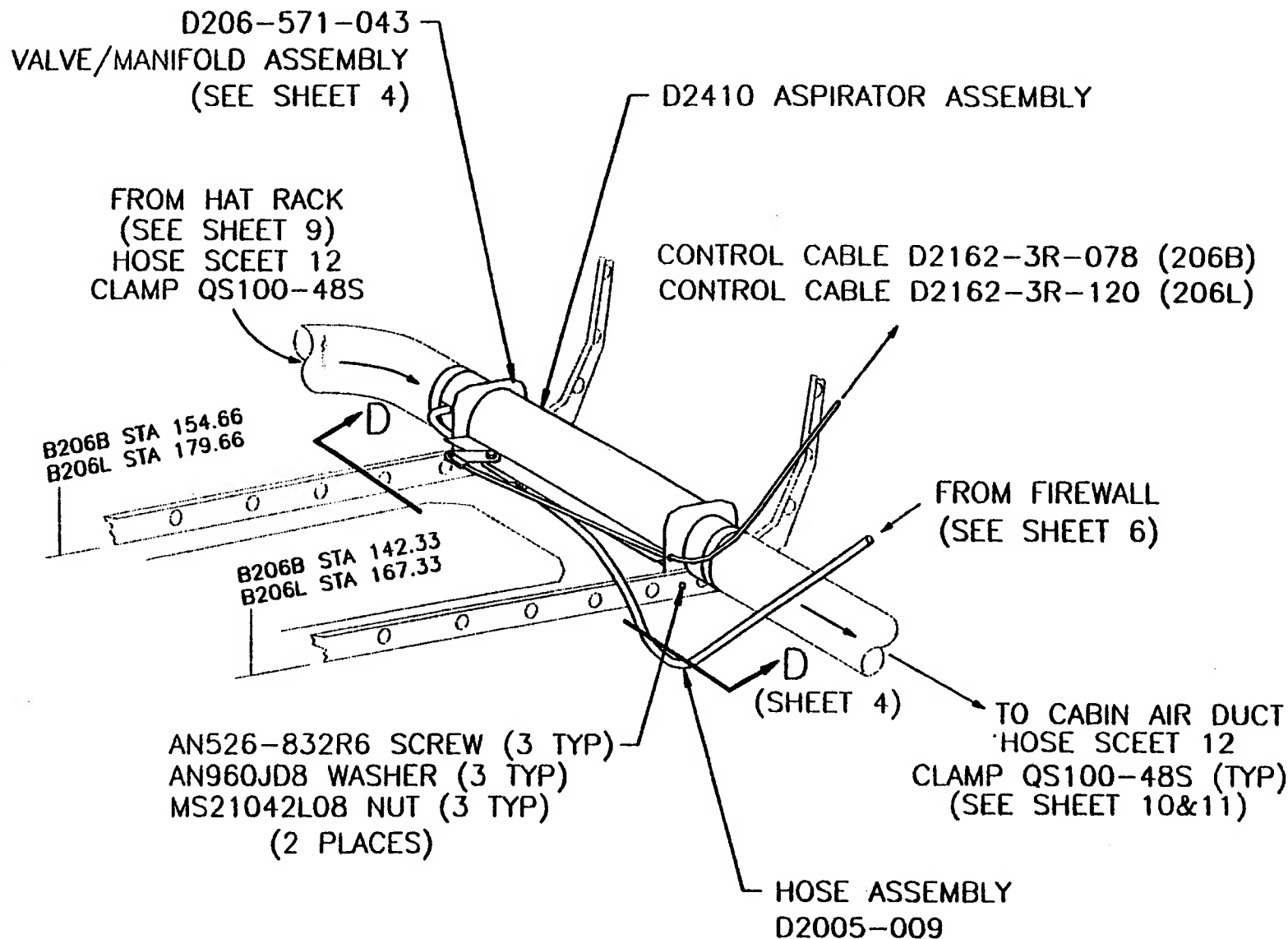
SUPPLEMENTARY HEATERS MUST BE INSTALLED IN CONJUNCTION WITH DART HEATER KIT D206-570 ie:

D206-571-341 MATES WITH D206-570-141

D206-571-345 MATES WITH D206-570-145



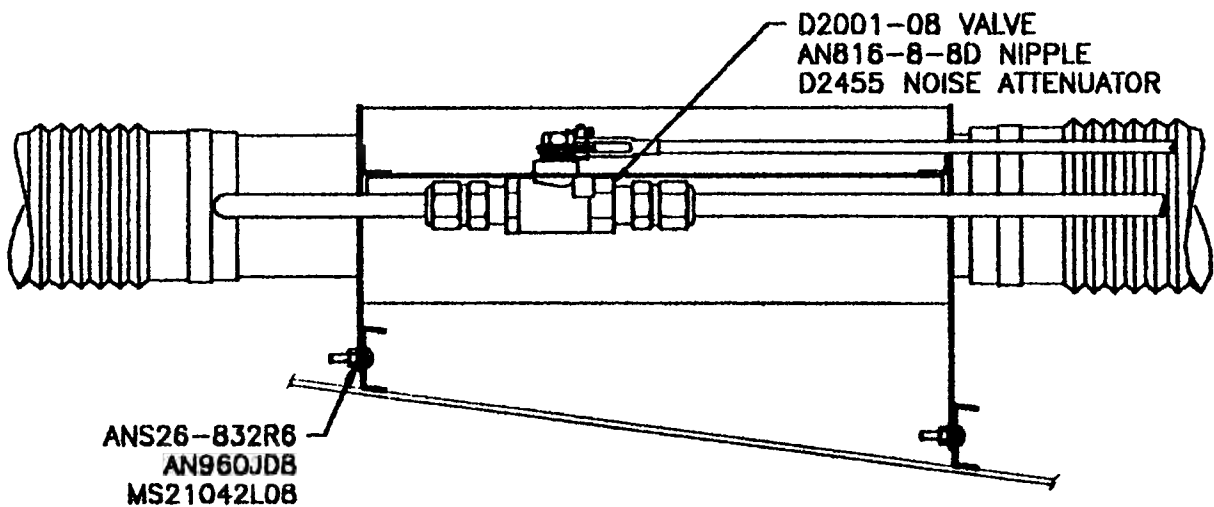
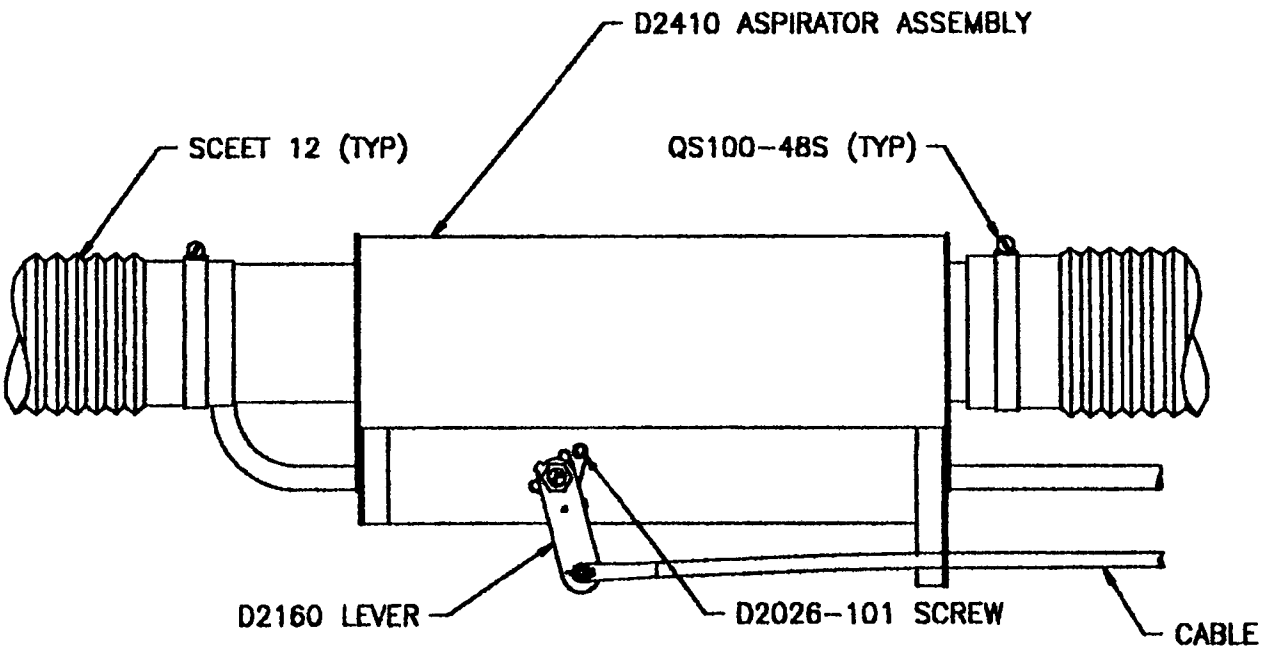
**DART**



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B WILLIAMS	K HAND	VICTORIA INTERNATIONAL AIRPORT, CANADA	
CHECKED	APPROVED	DRAWING NO.	SHEET 3 OF 11
DATE		TITLE	SCALE
JUNE 9, 1992		BELL 206 HEATING SYSTEM	
C	JUNE 30, 1995	RE-DRAWN	



**DART**



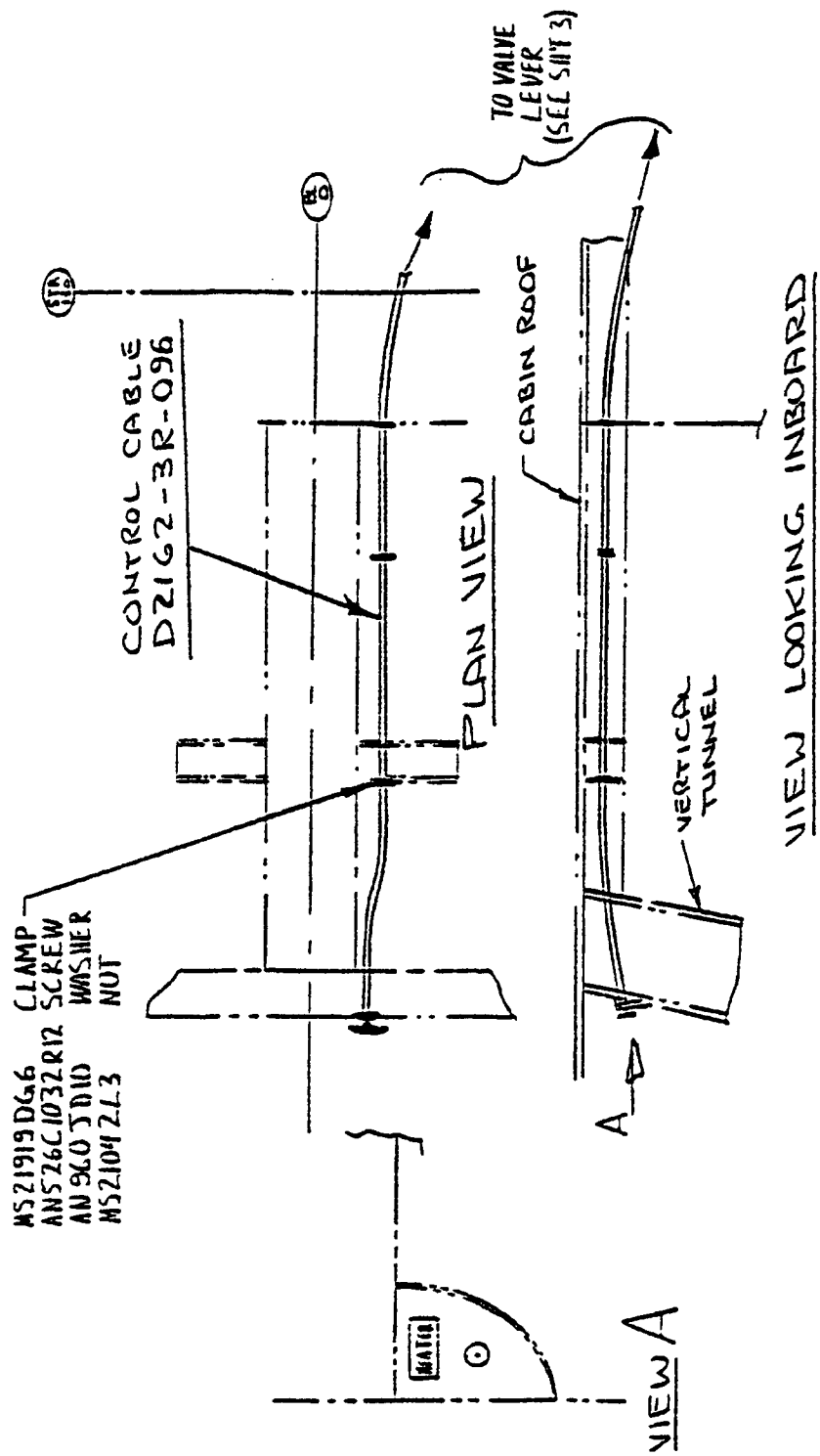
SECTION DD

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B WILLIAMS	K HAND	REV/C
CHECKED	APPROVED	DRAWING NO. D206-571
DATE JUNE 9, 1992		TITLE BELL 206 HEATING SYSTEM
C	JUNE 30, 1995	RE-DRAWN
		SHEET 4 OF 11 SCALE





DESIGN	DRAWN BY	DART AEROSPACE LTD	
B WILLIAMS	K HAND	VICTORIA INTERNATIONAL AIRPORT, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
<i>BL</i>	<i>[Signature]</i>	0206-571	SHEET 5 OF 11
DATE	TITLE		SCALE
JUNE 9, 1992	BELL 206 HEATING SYSTEM		
C	JUNE 30, 1995	RE-DRAWN	

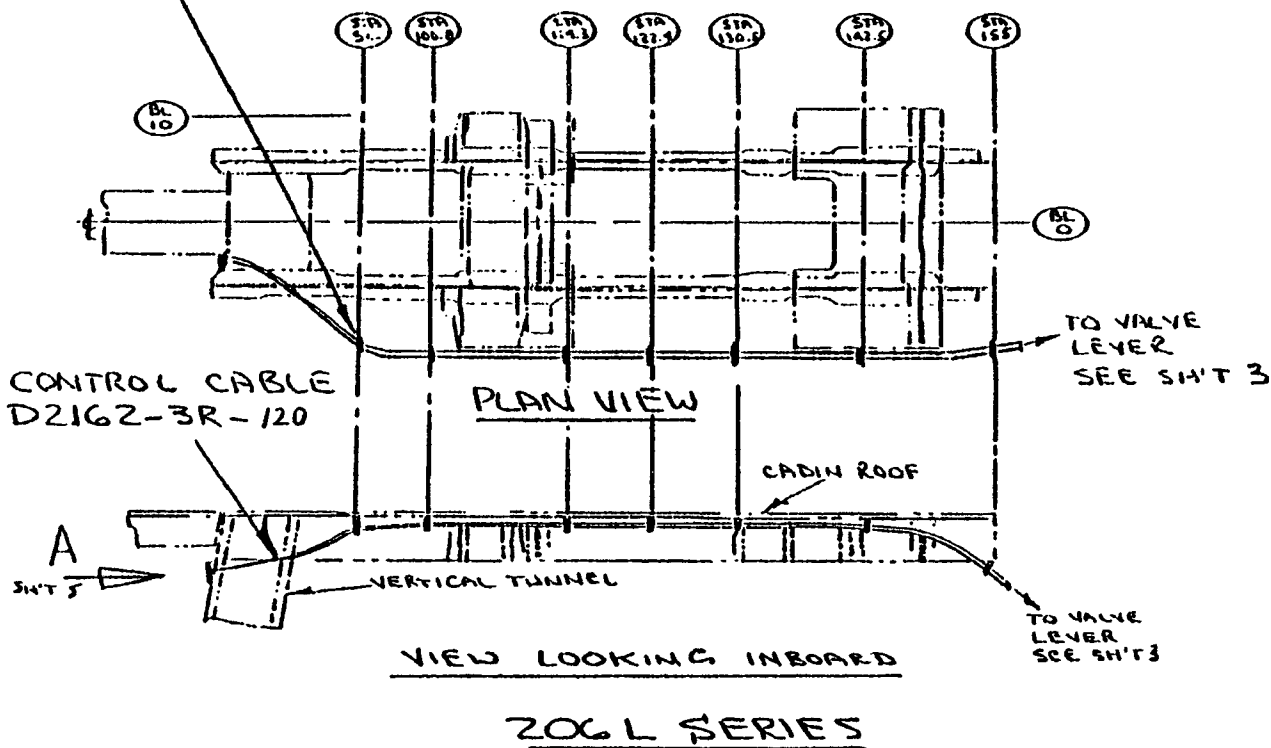




**DART**

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CHECKED	WILLIAMS	APPROVED	[Signature]	VICTORIA INTERNATIONAL AIRPORT, CANADA
DATE	JUNE 9, 1992	DRAWING NO.	D206-571	REV. C
TITLE	BELL 206 HEATING SYSTEM	SHEET	8 OF 11	SCALE
C	JUNE 30, 1995	RE-DRAWN		

CLAMP 118 21919 DA 6  
 SPACER NAS 42 DD2-24  
 SCREW AN526C1022R12  
 WASHER AN560JD10  
 NUT 113 21042 L03

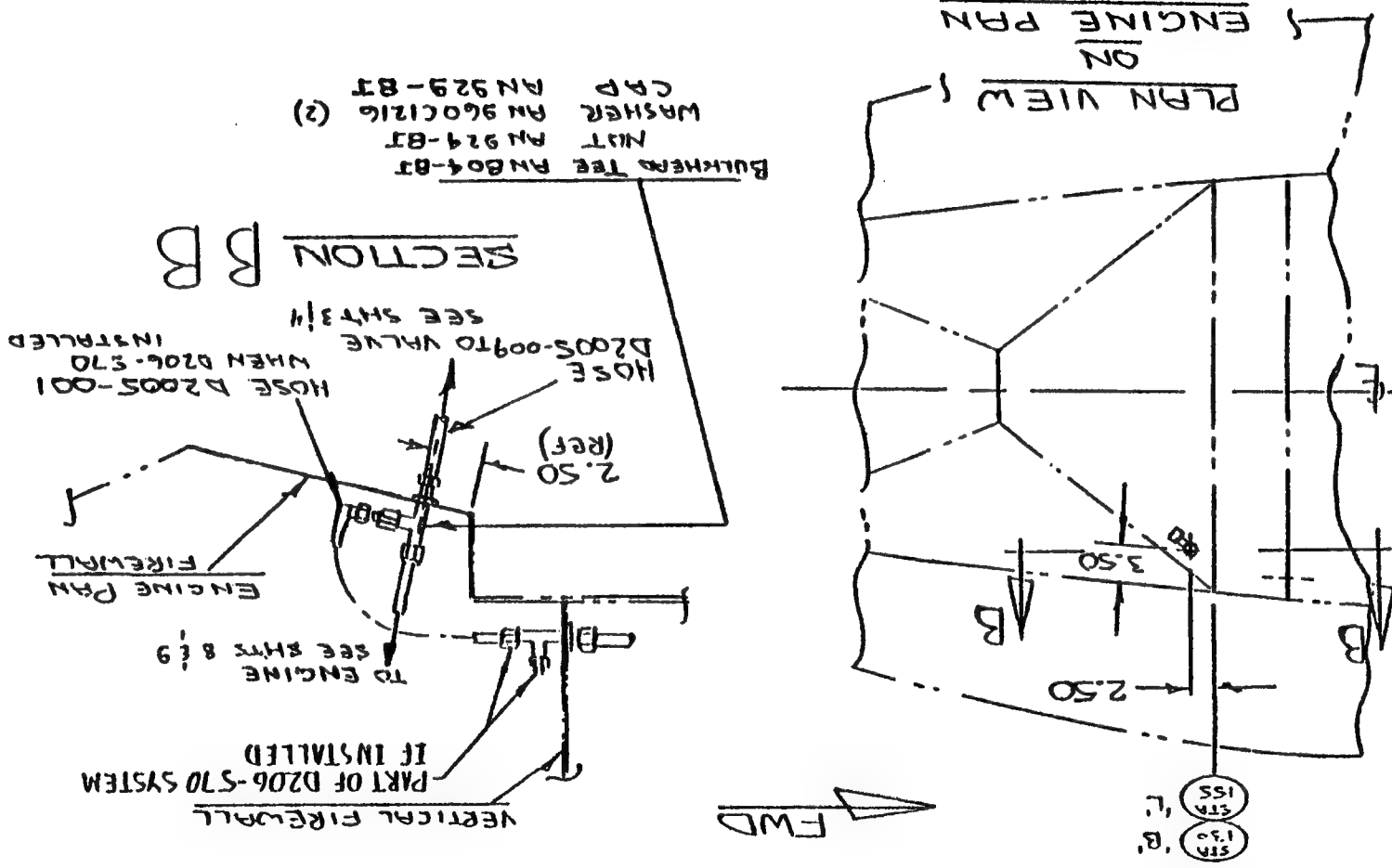








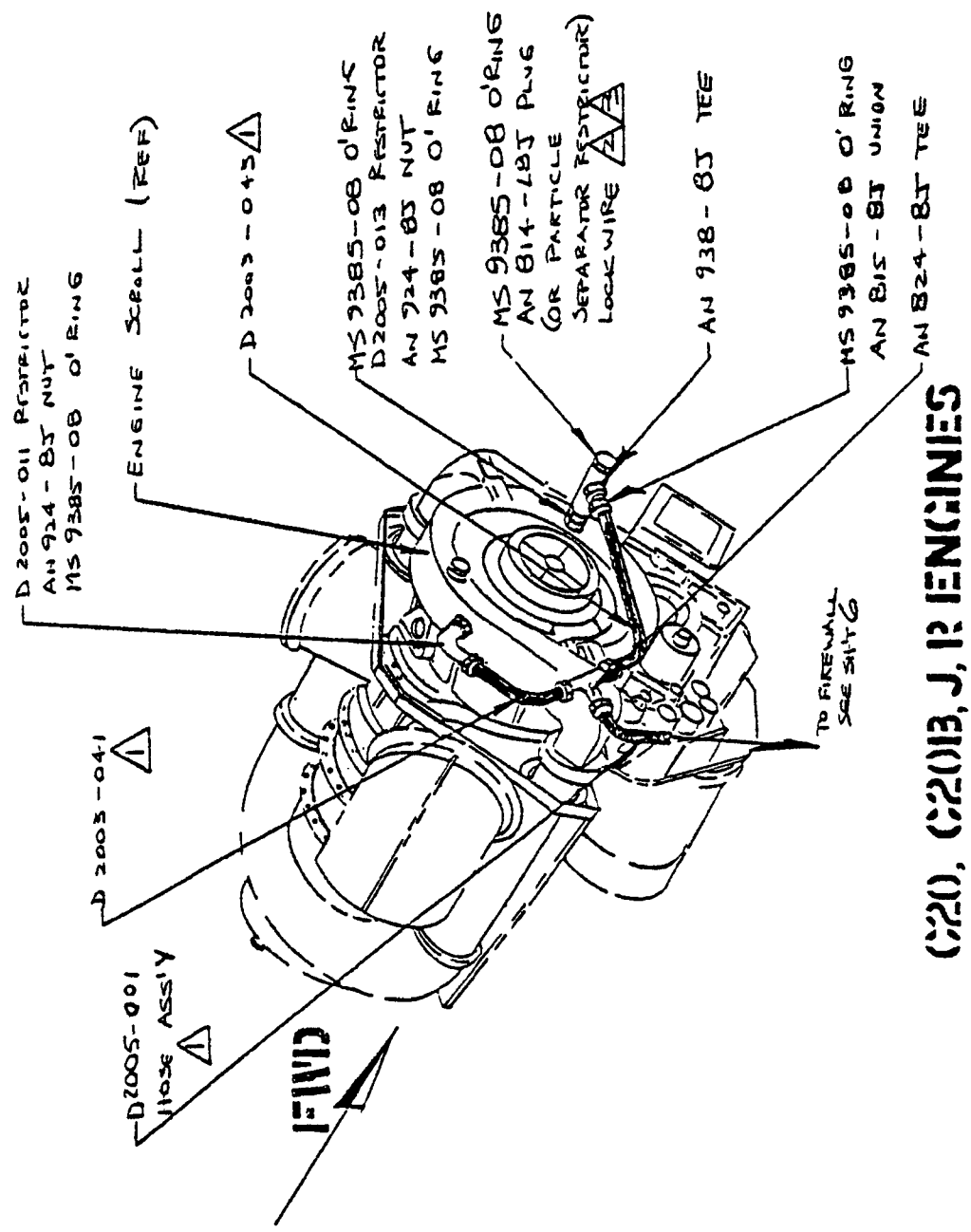
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B WILLIAMS	K HAND	VICTORIA INTERNATIONAL AIRPORT CANADA		
CHECKED	APPROVED	DRAWING NO.	REV. C	
BW	[Signature]	D206-571	SHEET 7 OF 11	
DATE		TITLE	SCALE	
JUNE 9, 1992		BELL 206 HEATING SYSTEM		
C	JUNE 30, 1995	RE-DRAWN		







DESIGN	DRAWN BY	DART AEROSPACE LTD	
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CHECKED	APPROVED	DRAWING NO.	REV. C
<i>[Signature]</i>	<i>[Signature]</i>	D206-571	SHEET 8 OF 11
DATE	TITLE		SCALE
JUNE 9, 1992	BELL 206 HEATING SYSTEM		
C	JUNE 30, 1995	RE-DRAWN	

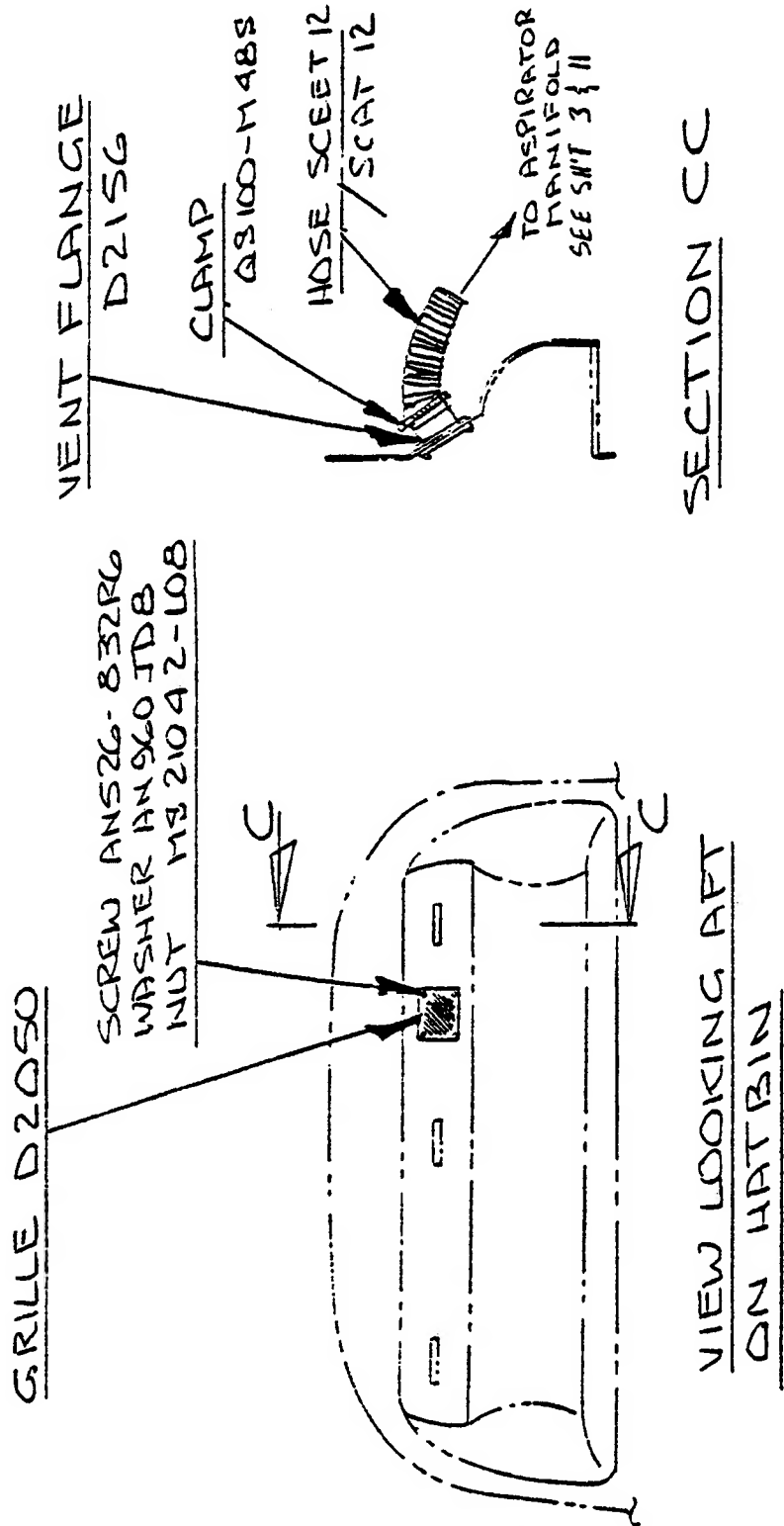


C20, C20B, J, R ENGINES





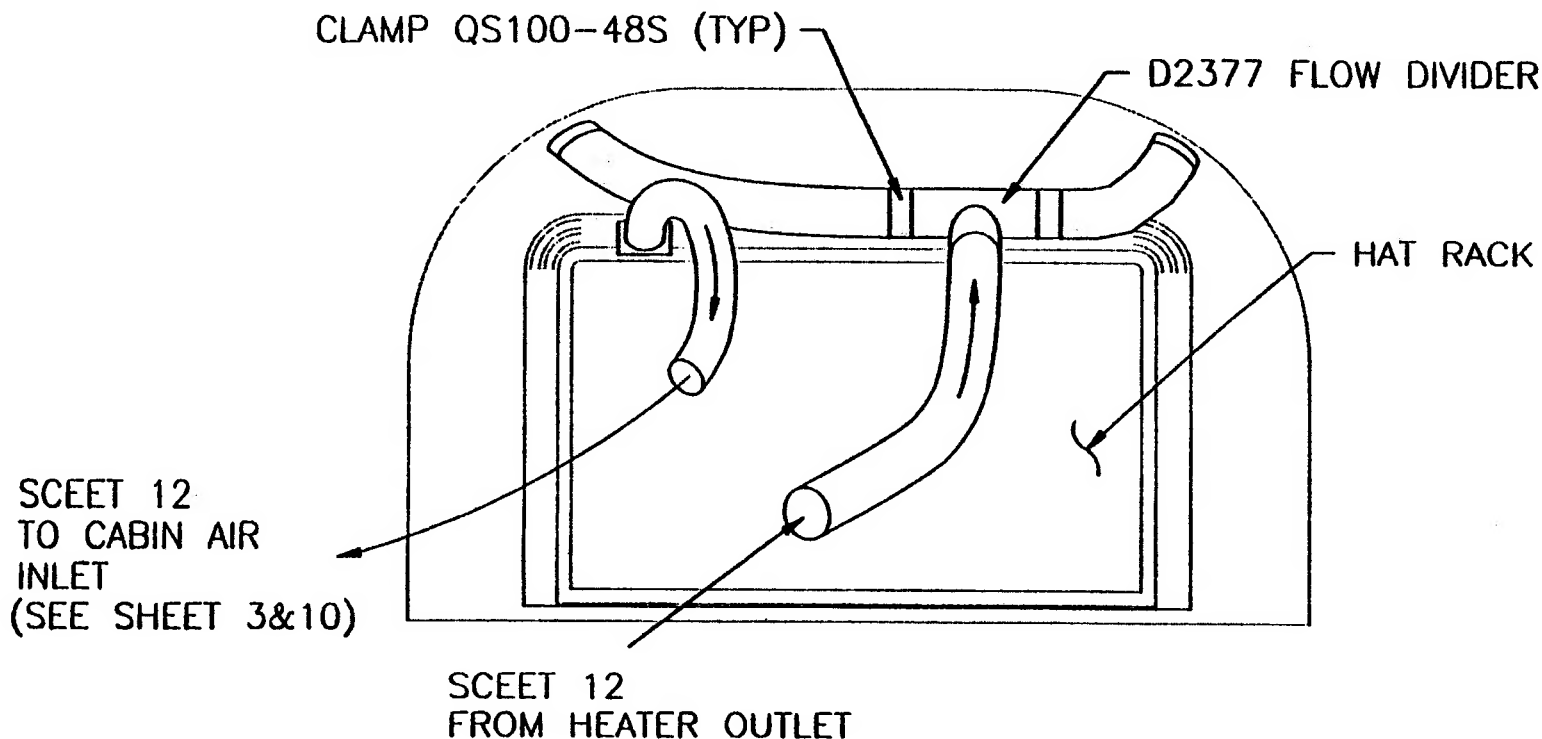
DESIGN	DRAWN BY	DART AEROSPACE LTD	
B WILLIAMS	K HAND	VICTORIA INTERNATIONAL AIRPORT, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
<i>Bo</i>	<i>[Signature]</i>	D206-571	SHEET 10 OF 11
DATE	TITLE		SCALE
JUNE 9, 1992	BELL 206 HEATING SYSTEM		
C	JUNE 30, 1995		RE-DRAWN





**DART**

DESIGN	B WILLIAMS	DRAWN BY	K HAND	DART AEROSPACE LTD VICTORIA INTERNATIONAL AIRPORT, CANADA
CHECKED	<i>BW</i>	APPROVED	<i>[Signature]</i>	DRAWING NO. D206-571
DATE	JUNE 9, 1992	TITLE	BELL 206 HEATING SYSTEM	REV. C SHEET 11 OF 11 SCALE
C	JUNE 30, 1995	RE-DRAWN		



VIEW LOOKING FORWARD,  
AFT OF HAT RACK